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July 8, 2013

Ms. Marlene Dortch, Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Dear Secretary Dortch:

SUBJECT: PUBLIC SAFETY COMMUNICATIONS OFFICE COMMENTS ON POTENTIAL TRIALS

The State of California, Governor's Office of Emergency Services, Public Safety Communications Office (PSCO) offers the following select responses in regards to the FCC public notice DA 13-1016 Technology Transitions Task Force Seeks Comment on Potential Trials Released May 10, 2013 GN Docket No. 13-5

1. As we move from TDM to all-IP networks, providers are migrating to voice over Internet Protocol (VoIP) interconnection. VoIP interconnection should be more efficient and has the potential to unleash new, innovative services and features. We seek comment on a VoIP interconnection trial that would gather data to determine whether there are technical issues that need to be addressed and gather information relevant to the appropriate policy framework.

California recommends an end to end VoIP interconnection trial be conducted to determine whether there are technical issues that need to be addressed and gather information relevant to the appropriate policy framework. A true VoIP interconnection trial should be IP end to end, from handset to PSAP call taker console. Data collected should consist of: Quality of Service (i.e., voice quality, delay, jitter, CRC errors), test results (i.e., call connect time on the legacy network compared to call connect time on the VoIP network), network design, feature/functionality and lessons learned.

2. As we transition away from TDM, the nation's emergency calling (911) system must also migrate to Next Generation 9-1-1 (NG911). Although there is broad consensus regarding the benefits and potential of NG911, when these new capabilities will be introduced is less certain. We seek comment on a trial that will assist the Commission, state, local and Tribal governments, and Public Safety Answering Points (PSAPs) in a few geographic areas to answer important technical and policy questions to accelerate the transition.

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Any trial should utilize an IP network that will help accelerate transition to a true end to end IP solution. The trial should incorporate a large enough geographic area involving multiple agencies to benefit from trail solution.

The trial should include extensive test plans, network designs illustrating survivability, interoperability with other networks, and defined completion criteria. The trial should also have defined operational procedures between participating government and tribal entities that will establish and define policy for future system deployment.

6. We also seek comment on whether there are other trials we should consider, such as additional numbering trials, trials to facilitate better access for persons with disabilities, and whether there are additional trials concerning the TDM to IP or copper to fiber transitions that we should evaluate. We also seek comment on the general structure and design of any trial, and legal and administrative issues.

The PSCO will be piloting SMS to TTY over the TDM network, Text to 9-1-1 Web browser and Text to 9-1-1 over dedicated IP circuits in the near future. The data collected during these trials can assist California in selecting and implementing viable solutions to provide 9-1-1 access for persons with disabilities. Shared lessons learned may mitigate future general structure, design, and administrative issues. To ensure we evaluate critical issues that impact persons with disabilities PSCO will partner with leaders from the disabled community to ensure we identify their concerns.

The PSCO has implemented a NG 9-1-1 ESINet solution for 37 PSAPs in 13 counties in the Northeast portion of California utilizing an IP MPLS enabled network. This trial transitioned the backbone network from TDM to IP. Transition from copper to fiber was not within the scope of this project; however, the carriers have been transitioning from copper to fiber successfully and continue to do so.

7. We also seek comment on ways to obtain useful data in addition to trials. For instance, the Commission is currently collecting data regarding special access through a mandatory data request. Are there other data collections that the Commission should undertake to obtain data necessary to guide sound policymaking regarding the ongoing technological transitions?

Accurate and complete data collection is important in making critical policy decisions. The PSCO has been successful by working with our vendor partners (AT&T, Verizon and Intrado) in obtaining network/system data such as caller location, position determining equipment response time, number of calls routed by location per PSAP, outage, service level agreement compliance, rights and remedies. Additional review of overall satisfaction of projects that are trialed by PSAPs and the impact to PSAP operations are needed to determine appropriate direction.

12. In moving from TDM to VoIP interconnection, issues such as the number and physical points of interconnection, pricing, transit, numbering and number portability, service level agreements, quality of service, and other terms and conditions will need to be resolved. For example, the TAC identified several issues that need to be resolved to reach VoIP interconnection agreements, including routing, addressing, security, signaling, media, quality, accounting/charging, and testing. A trial may shed light on which issues are more difficult to resolve and which issues parties are able to negotiate more easily. In addition, parties will need to resolve application of any legacy rules to

the VoIP interconnection agreement. We seek comment on how best to structure any trial to provide the Commission with data to evaluate which policies may be appropriate.

The PSCO has been successful utilizing service level agreements with meaningful rights and remedies and objectives based on per event and not mean time, success criteria (i.e., reducing time for 9-1-1 call to transverse the network), test plans for all feature/functionality and network survivability, reports that capture valuable data elements (i.e., CRC errors, retransmissions, jitter, audio quality, latency) and a close out document with lessons learned.

14. We propose that providers participating in a VoIP interconnection trial submit data regarding the length of time it took to reach an agreement, the issues in dispute, a copy of any agreements that are reached, as well as reports on the implementation of such agreements, such as call quality and reliability metrics, and a description of any technical problems that were encountered. We seek comment on the scope and frequency of these reporting requirements.

PSCO has always provided a description of solution with call flow diagrams, key milestones and objectives, project financials and lessons learned in the project close out report. In addition, the FCC may want to consider procurement vehicle utilized, ILEC/CLEC interoperability issues, test plans and results of testing, success criteria, and how it was achieved and service level agreement performance. At a minimum, the project team should have weekly meetings with all the Wireless Service Providers and Equipment Vendor partners. For example the Enhanced 9-1-1 grant project had kick off meetings, weekly face to face meetings, daily conference calls, and multiple site visits. The procurement process took approximately 2 years and the implementation took approximately 2 years.

15. Given that reliable 911 services is critical to public safety, we seek comment on a possible trial that would deploy an "all-IP" NG911 service on an accelerated basis in a number of geographic areas where public safety authorities are ready to deploy NG911 for one or more PSAPs. We seek comment on using trials that build on the earlier and more limited NG911 proof-of-concept effort that was conducted by the U.S. Department of Transportation in 2008.27.

The 2009 PSCO's Enhanced 9-1-1 Grant Project implemented the first in the nation location based (X/Y) routing with Verizon Wireless to 37 PSAPs in 13 counties in the Northeast portion of California. This proof-of-concept was designed to demonstrate and prove wireless 9-1-1 calls can be routed based on caller location to the appropriate PSAP by defining the caller's location and then routing to the associated PSAP based on caller location. PSCO is currently deploying a turn-key, evergreen, network based NG911 service over an MPLS capable IP network in Pasadena and Mendocino County. PSCO has also implemented an IP capable customer premise equipment hosted solution in Imperial, Ventura and Butte counties over an MPLS capable IP network.

16. With an updated NG911 trial, we would hope to gather both process and technical knowledge, addressing such questions as: Can VoIP and other IP-based networks readily interconnect with ESInets? Can advanced real-time services, such as video and text, reach ESInets? In IP-based networks, how can subscriber location data be maintained and conveyed to the ESInet? How long does it take transition from a TDM-based to an IP-based architecture? Where and how are 911 calls to be handed off to the ESInet, whether by ILECs or other providers, such as CMRS, interconnected VoIP, interconnected text and telematics services? Are there state or Commission rules that accelerate or delay the conversion from E911 to NG911? Are there steps that regulators can take to

speed the transition to NG911 and/or minimize the expense? We seek comment on the technical and process issues that should be covered by a trial and on how best to structure a trial to gather data on these issues.

PSCO sponsored trials require service level agreements with meaningful rights and remedies (i.e., 15% to 25% of total monthly reoccurring charges) and objectives (i.e., % of uptime will vary per type of transport) based on per event and not mean time, success criteria (i.e., reducing time for 9-1-1 call to transverse the network), test plans for all feature/functionality and network survivability, reports that capture valuable data elements (i.e., CRC errors, retransmissions, jitter, audio quality, latency) to identify issues. A close out document with lessons learned should also be compiled. TDM 9-1-1 calls will have to be redirected from the legacy network to the ESINet vendor provided points of interconnection. PSCO strongly recommends requiring service level agreements with meaningful rights and remedies on all trials.

19. Any trial should provide data on both the challenges of transitioning from E911 to NG911 and the operational performance characteristics of NG911 call handling. Thus, we propose that participants in the trial document the design and conversion process, including effort and time required, and gather data on call handling performance, interoperability issues, location accuracy, and any system failures related to call or location delivery. We seek comment on how best to address these issues and whether there are other aspects that should be documented or evaluated.

As an example, in 2012 PSCO piloted an Enhanced 9-1-1 Grant Project. PSCO always requires that reports include a detailed description of the solution including system network and call flow diagrams; lessons learned (i.e, coordination of connectivity between CLEC and ILEC, redirection of the wireless service provider connectivity from the legacy selective router to an ESINet point of interconnection, reconfiguration of legacy CPE to accommodate NG services, PSAP readiness, physical site issues including HVAC additions and upgrades, rack space, additional UPS and facility modifications);project timelines outlining various phases (i.e., planning and preparation, network and site readiness, proof of concept testing, migration and implementation). PSCO held weekly and sometimes daily face to face meetings with the vendor partners (Verizon and Intrado) to discuss project status and how to mitigate issues and risks as they developed. PSCO continues to meet with vendor partners and stakeholders after project completion to gather data on call handling performance, location accuracy and system failures. PSCO strongly recommends all trials require meetings with vendor partners and stakeholders after project completion to gather data on call handling performance, location accuracy and system failures.

26. We seek comment on whether LECs participating in a trial should collect network reliability measures for both their wireline and wireless product offerings in the trial areas. We seek comment on whether, in addition to the network reliability measures that the Commission currently collects for product offerings in the relevant trial area during the trial period.

PSCO as a matter of practice works with the vendor partners to determine what network reliability measures can be provided from the network switches and servers. The PSCO agrees that all network reliability measures such as uptime and outage duration should be collected for all product offerings in the relevant trial area. Reliability measures should also extend to customer premise equipment and feature/functionality. In addition, the PSCO believes that providers participating in a trial should

submit the number of dropped, abandoned and blocked calls whenever available. PSCO strongly recommends working with the vendor partners to determine what network reliability measures can be provided from the network switches and servers. PSCO strongly recommends all trials require selected vendor partners provide what network reliability measures are available from network switches and servers.

30. Ensuring that people with disabilities continue to have access to evolving technologies is another core value of the Act. We seek comment on what trials we should conduct to assess the potential for improving access for people with disabilities during this transitional period.

The PSCO is currently finalizing the details required to implement pilot projects to evaluate potential solutions for improving 9-1-1 access for people with disabilities. These pilot projects include SMS to TTY over the TDM network, Text to 9-1-1 over a web browser and Text to 9-1-1 over dedicated IP circuits in the near future. PSCO will do a comparative analysis of the different available Text to 9-1-1 services and document the differences in quality of service, ease of use, public satisfaction and reliability. The results of the projects are expected to identify reliable solutions that will improve 9-1-1 access for people with disabilities in California and can be used as potential solutions for other 9-1-1 providers across the United States.

38. We seek comment on the usability of the trial data. What sort of protections should apply to potentially sensitive data? Should information be confidential, filed pursuant to protective orders, or generally open to the public? Should we, as the Commission required in the *VoIP Direct Access Order*, issue a report with our findings after each trial concludes?

The PSCO always shares trial data in the form of a close out report. PSCO believes trial data should be generally open to the public except network designs. Network designs should be kept confidential for security reasons.

Karen Wong

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cc: William D. Anderson, Branch Manager, 9-1-1 Emergency Communications Branch